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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,791	12/29/2003	Jerrold Von Hauck	APPL-P2839	5370

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 GAZDZINSKI & ASSOCIATES, P.C.  
 11440 WEST BERNARDO COURT  
 SUITE 375  
 SAN DIEGO, CA 92127

EXAMINER
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MISIURA, BRIAN THOMAS

ART UNIT	PAPER NUMBER
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2111

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/02/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/749,791	<b>Applicant(s)</b> HAUCK, JERROLD VON	
	<b>Examiner</b> Brian T. Misiura	<b>Art Unit</b> 2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 20-30 and 33-37 is/are rejected.
- 7) ☒ Claim(s) 18, 19, 31 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **Detailed Action**

#### **Response to Arguments**

Applicant's arguments with respect to claims 1-37 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Objections***

Claim 1 is objected to because of the following informalities: the word 'bus', followed by a comma, is missing in the following limitation: "sending via all Phys connected on the bus, packets...". Appropriate correction is required.

Claims 16 and 17 are objected to because of the following informalities: the Examiner believes the word 'a' in this phrase "wherein the a delay", is unneeded, as it is understood that the applicant is referring to the delay introduced in section (ii) of Claim 13.

Claims 34, 36, and 37 are objected to because of the following informalities: line one contains the misspelled word "alls".

Claim 35 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 35 and Claim 30 contain the same subject matter.

Claim 36 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to

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cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 36 and Claim 33 appear contain the same subject matter.

Claim 37 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 37 appears to be identical to Claim 34.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 14 and 15 recite the limitation "the arbitration response delay". There is insufficient antecedent basis for this limitation in the claim. The Examiner believes the Applicant is referring the delay introduced in section (i) of Claim 13, however, referring to "the delay in propagating an arbitration response" as "the arbitration response delay", without previously stating the two are equivalent is not allowed and therefore appropriate correction is required.

Claim 36 recites the limitation "the maximum idle value". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-17, 20-30, and 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masunaga et al. U.S. Patent No. 6,909,699 in view of LaFollette et al. U.S. Patent No. 6,212,171.

Per Claims 1, 10, and 27, Masunaga discloses:

a method of optimizing communication over a high-speed serial bus by minimizing the delay between packets transmitted over the bus, the method comprising:

- sending a ping from a first node to a second node; sending a response from the second node to the first node after receiving the ping (column 19 lines 30-50, figure 40);
- calculating a maximum round trip delay between a first PHY of the first node and a second Phy of the second node based at least in part upon a jitter, and further based at least in part upon the response sent to the first node(Masunaga, column 19 lines 30-50, column 20 lines 24-41, figure 40);

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- sending via a bus manager sending a configuration packet to all PHYs connected on the bus, the configuration packet containing a minimum gap\_count parameter value, the minimum gap\_count parameter value derived from the maximum round trip delay between the first PHY and the second PHY (column 20 lines 42-47, figure 40) (By saying “thereby optimizing the gap count”, it is understood that the configuration packet was sent to all nodes.); and
- sending via all PHYs connected on the bus sending packets over the bus using the minimum gap\_count parameter value as delay between packets (column 18 lines 55-65, column 19 lines 1-16) [defines minimum gap-count.], and (column 20 lines 42-47 figure 40).

Masunaga does not disclose calculating a maximum round trip delay between a first PHY of the first node and a second Phy of the second node based at least in part upon a jitter.

However, LaFollete discloses using both a jitter and a measured ping response in order to calculate a maximum round trip delay (column 5 lines 18-41, column 6 lines 40-43, figures 1-3 – in the case where the bus manager is one of the leaf nodes and the target node is only one hop away, the max round trip delay is equivalent to the maximum propagation time)

It would have been obvious to one having ordinary skill in the art at the time of the applicants claimed invention to incorporate the jitter delay of LaFollette into the Max RTD of Masunaga since it is apparent that such a delay is evident in systems in which a max RTD would be calculated.

Per claim 2, Masunaga discloses: the method of claim 1, further comprising preserving an ack/iso gap between packets, wherein a first PHY sent a most recently-sent packet and a second PHY is responding to the first PHY (column 2 lines 40-45, figure 4).

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Per claim 3, Masunaga discloses: the method of claim 2, wherein the second PHY is adapted to respond with an ack packet (column 2 lines 40-45, figure 4).

Per claim 4, Masunaga discloses: the method of claim 2, wherein the second PHY is adapted to respond with an isochronous arbitration packet (figure 7).

Per claim 5, Masunaga discloses: the method of claim 1, wherein the first PHY sends an isochronous packet, observes a subaction gap, and initiates an arbitration indication (figure 6).

Per claim 6, Masunaga discloses: the method of claim 1, wherein the first PHY sends an asynchronous packet, observes an arbitration reset gap, and initiates an arbitration indication (column 18, lines 34-47, figure 38).

Per claim 7, Masunaga discloses: the method of claim 1, wherein calculating the round trip delay comprises executing a ping command at a link layer on said first node directed at a link layer on said second node (column 13 lines 7-22 figure 24, and column 19 lines 30-50, column 20 lines 24-41, figure 40).

Per claim 8, Masunaga discloses: the method of claim 7, wherein calculating the round trip delay comprises calculating a round trip delay from a first link on the first node and a second link on the second node (Masunaga, column 19 lines 30-50, column 20 lines 24-41, figure 40).

Per claim 9, Masunaga discloses: the method of claim 1, wherein the second PHY has a subaction gap timeout value that is greater than an IDLE value that can occur within a subaction and an isochronous interval on the high-speed serial bus (figure 5, sub action gap is smaller than the entire subaction).

Per Claims 11, 22, and 28, Masunaga discloses wherein the response comprises a self-ID packet (column 19 lines 25-34).

Per Claims 12, 23, and 29, Masunaga does not disclose wherein the jitter determination relates instantaneous measurements of a round trip delay to the maximum round trip delay between the first PHY and the second PHY.

However, LaFollette discloses a round trip delay (column 5 lines 27-28 'PingMeas'), wherein adding in jitter terms to the measured ping value relates it to the maximum round trip delay (column 5 lines 18-42, figures 1-3).

It would have been obvious to one having ordinary skill in the art at the time of the applicants claimed invention to incorporate the jitter delay of LaFollette into the Max RTD of Masunaga since it is apparent that such a delay is evident in systems in which a max RTD would be calculated.

Per Claims 13, 24, 30, and 35, Masunaga does not disclose wherein the jitter is related to both (i) a delay in propagating an arbitration response, and (ii) a delay associated with transmitting data from one PHY port to another.

However, LaFollette discloses in the equation in column 5 line 40, that the jitter, arbitration response delay, and ping response time are all linked in an equation. Therefore, depending on how the equation is manipulated, the jitter is related to both the arbitration response delay and the ping response time.

It would have been obvious to one having ordinary skill in the art at the time of the applicants claimed invention to incorporate the jitter delay of LaFollette into the Max RTD of Masunaga since it is apparent that such a delay is evident in systems in which a max RTD would be calculated.



Per Claims 14-17, Masunaga discloses obtaining the propagation time by measuring from the time the ping packet is transmitted (PHY\_delay) to the reception of the self-id packet. However, he does not distinctly disclose arbitration response delay.

However, Lafollette distinctly discloses both the arbitration response delay and the ping response time (phy delay). In the above-mentioned claims, the applicant is merely defining these delays using ports on PHY's. The definition of these terms is understood by those of ordinary skill in the art, and the manner in which the system is configured will determine exactly how the delays are processed.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the applicants claimed invention to incorporate the jitter delay of LaFollette into the Max RTD of Masunaga since it is apparent that such a delay is evident in systems in which a max RTD would be calculated. The max RTD accounting for both arbitration response delay and phy delay.

Per Claims 20, 25, 33, and 36, Masunaga discloses wherein all PHYs of the high-speed serial bus comprise a subaction gap detection time that is greater than a maximum idle value that can occur within a subaction gap (this is understood within the meaning of a subaction gap, refer to columns 18 and 19 of Masunaga as well as table 1 of Lafollette).

Per Claim 21, 26, 34, and 37, Masunaga does not disclose wherein all PHYs of the high-speed serial bus comprise an arbitration reset gap timeout value that is greater than the largest subaction gap that can occur over the high-speed serial bus.

However, Lafollette discloses the arbitration reset gap minimum to be larger than the subaction gap maximum (column 9 lines 38-40).

It would have been obvious to one having ordinary skill in the art at the time of the applicants claimed invention to require the arbitration reset gap minimum be larger than the subaction gap maximum in order to prevent a node from seeing an arbitration reset gap before another node sees a subaction gap.

Claim 27, A device for use in a first node of a serial bus, the device comprising: a first module adapted to ping a second node; a second module adapted to receive a ping response from the second node; a third module adapted to calculate a maximum round trip delay between a first PHY associated with the first node and a second PHY associated with the second node based at least in part upon a jitter value, and further based at least in part on the ping response sent to the second module; and a fourth module adapted to send a configuration packet to all PHYs on the serial bus, the configuration packet containing a gap count, the gap count derived from the maximum round trip delay between the first PHY and the second PHY.

#### **Allowable Subject Matter**

Claims 18, 19, 31, and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Misiura whose telephone number is (571) 272-0889. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (571) 272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Brian T. Misiura*  
2/23/2007

*Paul R. Myers*  
**PAUL R. MYERS**  
**PRIMARY EXAMINER**